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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,138

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Christopher T. Grabowski

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03/13/2012

RONALD D. SLUSKY, ATTORNEY AT LAW
353 WEST 56TH ST SUITE 5L
NEW YORK, NY 10019-3775

EXAMINER

REYES, REGINALD R

ART UNIT

PAPER NUMBER

3626

MAIL DATE

DELIVERY MODE

03/13/2012

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,138	Applicant(s) GRABOWSKI ET AL.	
	Examiner REGINALD R. REYES	Art Unit 3626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2012.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 103-109 and 111 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 103-109 and 111 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11-30-06/06-27-11/06-27-11</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 103-109 and 111 in the reply filed on 2-13-12 is acknowledged. The traversal is on the ground(s) that the present application are in directed to one invention. This is not found persuasive because In the instant case, subcombination I has separate utility by a route to a desired destination is indicated by a virtual optical image seen by an operator of the vehicle substantially in front of the vehicle, wherein the virtual optical image is in the form of a line having a discernible width and having visibly well defined edges, the perceived width of the line by the operator of the vehicle being less than about 3 degrees of angle, wherein at least part of the line is presented as extending away from the operator in three dimensions, and wherein a portion of the line which is farther away from the operator than some other portion of the line has smaller angular thickness than that other portion of the line, substantially in agreement with laws of perspective. Subcombination II has a separate utility such display a luminous image of a cable on a head-up display within a vehicle in such a way that the image of the cable is superimposed over landscape viewed by an observer within the vehicle, the cable appearing to extend out in front of, and away from the vehicle, the cable appearing to be about between 3 to 20 meters above the surface of the landscape and to follow the surface underneath it vertically, the image of the cable being displayed with the depth cue of stereoscopic disparity and with the depth cue of motion parallax induced by head movements of the observer, and the image of

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the cable being displayed with an optic flow that is consistent with the optic flow of the landscape when the vehicle is moving, so as to cause the cable to appear to the observer to be substantially stationary relative to the landscape.

The requirement is still deemed proper and is therefore made FINAL.

Status of Claims

2. Claims 103-109 and 111 have been examined and are addressed below. Claims 92-102 and 110 have been restricted.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 103-109 and 111 rejected under 35 U.S.C. 103(a) as being unpatentable over Smalanskas (5,519,410) and Yuda (2002/0049534).

4. With respect to claim 103 Smalanskas teaches an apparatus for use in a motor vehicle that can travel on a roadway, the apparatus being adapted to indicate a route to a desired destination by displaying a virtual optical image seen by an operator of the vehicle substantially in front of the vehicle, and, said path being positioned at least in part substantially in front and above of the vehicle, from about 3 to 20 meters above the roadway and substantially parallel to the centerline of the roadway, and wherein the

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movement of the virtual optical image is sufficiently fast as to cause, because of the persistence of human vision, the virtual optical image to be perceived by the operator of the vehicle to be an extended object, extending along the path (Smalanskas Fig1 and column 3 lines 30-47).

Smalanskas does not explicitly teach wherein the virtual optical image is in a form of a luminous spot and wherein the virtual optical image moves along a three-dimensional path.

Yuda teaches a method of navigating a moving object including the steps of (i) acquiring a map data, (ii) acquiring a current position data, (iii) calculating an optimum route data from the map data, (iv) generating a forward map data from the current position data and the optimum route data, (v) generating a route navigation symbol image from the forward map data, and (vi) displaying a three-dimensional form of the route navigation symbol image, wherein (vii) the step of displaying the route navigation symbol image includes the steps of generating parallax beams to display the route navigation symbol image, and diffracting the parallax beams to display the route navigation symbol image (Yuda 106).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Smalanskas and Yuda. The well known elements described are merely a combination of old elements, and in the combination, each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 111 is rejected same as above since they are relatively similar.

5. With respect to claim 104 Smalanskas in view of Yuda teach the apparatus of claim 103 wherein the virtual optical image is produced periodically and frequently enough to cause the image perceived to be continuously present by the operator of the vehicle (Smalanskas Fig1 and column 3 lines 30-47).

6. With respect to claim 105 Smalanskas in view of Yuda teach the apparatus of claim 104 wherein the virtual optical image, in at least some part of its travel, traverses substantially the same virtual path relative to the roadway despite of the movement of the vehicle, thus to cause the image perceived by the operator of the vehicle to be stationary relative to the roadway (Yuda 106).

7. With respect to claim 106 Smalanskas in view of Yuda teach the apparatus of claim 103 wherein the virtual optical image is an image of a real light source presented through viewing optics of a display apparatus, said display apparatus being able to change the optical distance of the virtual optical image from the operator of the vehicle by continuously adjusting the position of the real light source in relation to said viewing optics of the optical apparatus (Smalanskas Fig1 and column 3 lines 30-47).

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8. With respect to claim 107 Smalanskas in view of Yuda teach the apparatus of claim 106 wherein the viewing optics have an exit pupil large enough to accommodate both eyes of the operator of the vehicle (Smalanskas Fig1 and column 3 lines 30-47).

9. With respect to claim 108 Smalanskas in view of Yuda teach the method of claim 93 wherein the at least one cable comprises a line with non-closely-spaced gaps(Smalanskas Fig1 and column 3 lines 30-47).

10. With respect to claim 109 Smalanskas in view of Yuda teach the apparatus of claim 106 wherein the real light source is an illuminated spot created by shining a laser beam onto a diffusive screen, the laser beam being steerable under computer control in vector graphic mode, and wherein the adjusting the position of the real light source is effected through continuous actuation of the diffusive screen by an actuator steered in real time under computer control (Yuda 106-107).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to REGINALD R. REYES whose telephone number is (571)270-5212. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Morgan can be reached on 571-272-6773. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. R. R./
Examiner, Art Unit 3626

/DILEK B COBANOGLU/
Primary Examiner, Art Unit 3626